



FIG. 1A

FIG. 1B

FIG. 1C

FIG. 1



Anopheles gambiae odorant receptor 1 genomic sequence (SEQ ID NO: 9)

Features:

- 1) Presumed Untranslated 5' and 3' regions are underlined.
- 2) Potential TATA box transcription initiation signal is double underlined.
- 3) Putative Start (ATG) and Stop (TAA) codons are in **BOLD**.
- 4) Introns are tentatively assigned and are shown in lower case.

Exons are boxed

AGCTTTGTTCATTTATGTTGAAATCTAGCCCATTTGTATAGTGCTGAACGACGAAAACATACGAAAGTACCTCGT
CCGAACACTATCAACATTAATTATACCAAGCTAGAAGAGATATTTATAGTCAAGCCTCAACATCATAGGAAACTTT
AGCAAAACCATTTAATTACATGATGATAAGTCCCACCTCTTACCCCAGCACAGGTTTGAGAAGGACGAAAGTATCT
TTACGATAATATTACTCTAAGGTAGTTTTGAATAAAAAATTACGTGCAAGTGGTGGCATCGGACATCATCTTC
GAAAGAATCTACTAAGTCATACACACACCCCAAGACCGACGTAGTTTCATCTAGAAAAAAACGGGTCAGCTCCATC
GAACACGTCAGGACATAACTGCGACATGCGTATGGTCAGTCCACTAGTCCCAACACTGGTTCCAGGCACTACCTT
CCGAAGCAGTAGAACCCTAATGTATTGGAATATTAGGACATACTGCAACATGCATATGGCTAGTCCGCTGGTACC
AACGATGGCACCAGGACACTATCTGCGGCCTTGTAAAATCACTGTAAAATCTATACAAAAACGGCTTTACCCATACT
TTATCACAAAAAACGGCAGGTGAGGGCTGGATTGCTTCAAAGCATTAGAAATATATAATTCAAAAGTCCATAATCTCC
TTAAAAGATAGACAaCAGTAGAGAACACATTTAGTGCTCTTTTCGTTCGAGTTAGTTGCCTTCTCAAGTAAGCGTTT
AATGCTCAATTGTTGATTTCGTGGATGACTCTCGTACGTGCTATAGTGGTCATACTTCCAATTAGATTCAT
AATTAGTTTCCAATTGTCCACGGAAACCCaCAAAAGAAAAAAAAAAACTTGTATCTAGGGTGGAATTTTTCGAGAACA
ATTGGACACTTCAT**ATG**AAAAAAGGACAGCTTTTTCAAAATGTTAAATAAACACCGTTGGATCCCTTgttggatttca
attctccaaattctgcagaataattctgcaaattttacaaaactgtccaaccaccaataattccaaattaatcatctg

FIG. 1A

aacattaaaactgataaattaagatgagtaaatgcttctgtcatcacctaagaaatcgattagtttgataaaaaagaa
caaattgaaatacaataaagtcctgaattttatttcgaataaacggcttgaactcatttatttcaaaaaacctttgaga
aattcctcgttgaaaattgggtcctatagttctgctaacggggccacttcaaaagcaagaactaacaataatcataat
tatggtgcaagtaactatcagtagtaatacgccattaaaaacttttcccaatttgcggctcgttacccggctaaa
tacagagcagagtaacgggaagtgatcaacgtcgctattagataacgaggaacgccctccgaagggtgtgtgaagg
acctttcaaatgaaaccaagtactgtttccagttttaaatggatagttataaaatgagccgttcaacgatcggg
catcattgagtttcatcttcgaggagaaaatagatcagtgccactgtttaaccgaaaagtaatgaagctgaacaaact
gaaccacgggtgggatgcgtacgatcgacgggatctgttctggttcagttgcttgttgaataatttagGCCTAT
GGCCACCGGAAGATACGGATCAGGCAACCGGAACCGGTACATCGCGTACGGTTGGGCTTTGCCGGATCATGTTTCTTA
CATCTGTACGCTCTAACGCAAGCCCTATACTTCAAGGATGTGAAGGATATTAATgtgagtcctcagttagctattag
tgttccacctgtccataaatctgtcttttattgggtagGACATCGCAAAATGCATTGTTTCGTGCTTATGACTCAAGTGA
CGTTGATCTACAAGCTGAAAAAGTTTAACCTACAACATCGCACGGATTTCAGGCTTGTCTCGCAAGCTTAAC TG CACA
CTGTATCACCCGAAACAGCGGAAGAAATTCAGgtaagcctgctgggaaatatgactaaaaagagtgcataacaaacga
ctctcctccaaatgtagCCCCGTTTTTACAATCGATGAGTGGAGTGTTTTGGCTGATGATCTTTCTCATGTTTGTGGC
TATCTTCACCATCATCATGTGGGTTATGTCCGCCAGCCTTCGACAAATGAACGTCTGCTGCCcGTGCCGGCCCTGGTTCC
CGGTGGACTATCACCATTCGGACATAGTGTACGGTGTACTGTTCCGTATCAAACCATTTGGAATCGTCATGAGCGCA
ACGTACAACCTTCTCGACCGATAACCATGTTTTCGGGCTTGATGCTACACATAAATGGACAAATTTGTCCGGCTTGGTAG
TATGGTTAAAAAGgtgagtacggcgactacttgccctccagtaaggacaggagtttgttccgttatgatatacatt
ttatcadCTTGGACATGACGTCCCTCCGAACGCCAATTTGGTCGCAACGGATGCGGAATGGAAAGAGATGCGAAAGC
GCATCGACCATCACTCCAAAGTGTACGGTACGATGTACGCTAAAGTAACGGAGTGTGTGCTGTTTCACAAAGGACATC
TTAAGgtacgaaattggggccaaattaattgtgtcatttaaaaaagcttgacccaaactttcacagcttcggcgatgaagt
gcaggacattttccaaagGATCTATCTTCGCGCAAGTATGCGCGTCTGTAAATTATCATTTGTATGACACTGCTGCAAC
TACCGGGGgCGATGTTACGATgGCCGATCTGCTGGGCTGTTGCTAGTAAaGACATCGCAAGTGTTTA

FIG. 1B

TTTCTGTACGTAGGGAATGAAATCTCCTATACGgtaggttgacacgtagaggaattaaatgtttgggaagaata
tcaataccaaatagatgatgttctcgttacaqACGGATAAAATTACAGAGTTTGTGGGTTTCCAACTACTTCAAG
TTCGATAAGCGTACCAGCCAAAGCAATGATATTTTCTGCAAAATgtgagatagcgggtgtattgtgcagtcagtaca
ttaaatcgttctctatttcagGACTCTTAAAGATGTTCAACATCAAGGTGGGAAGTGTCTTTGAAGGTTACGCTAAAT
CTTCACACACATTTTGCAGgtaatgtaattatgctgtggtatttagcttgaataaagctacaaactttgaaagtaattt
caatcgttttgtaqATTATGAAGCTATCGTACTCCTATCTGGCCGTACTTCAGAGCATGGAATCAGAGTAATGGtG
tTAATATCCTTAAATGTTGAAATTAATATTTTGTAGATTTATGCATAAAAGTAaTaTTAATTTTATACATCAAACGT
AAGCCCGctaGTTTCAATTAGCCCTTTTCCAAAATTTATCAAAATTGATTCGAATTGATTCAGAGTTTCAGGAATT
TAATCTGATAGGATATCTTGTATTATCCAAATAGAGGTGTGGAGCGTTCCCAAGCCATTCTGTTGATAGTTTATAGCA
CCGTCGAGCAGTTGATCGCTGTGATCGCTAGGCGCACCTGATTTTATCTTATCTCGCACCTGTTATGGCAAGGGCG
CTTTTCACACGTTTCACACACAATAATGCACATGTATAATGCATTCTTACTTTAGCATTTTGTGTACATAATAATACC
AAAATTATGCATTTTATCTCACGCAACGATTAGAGGATGACTTCACAAAGGTCCATCTAGTGGTAGGAGGTATAC
AATTATACCTCTCAAAATCTCACAGCAtAATGAGAAACAAAAGGATACCAAGCATACCCCTTTTCTTACTTGACAATT
TCATTTGATTATGTAATAAAGCACTGCacGTCTGACTTCCTAAAA

FIG. 1C

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FIG. 2A

FIG. 2B

FIG. 2C

FIG. 2

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Anopheles gambiae odorant receptor 2 genomic sequence (SEQ ID NO: 10)

Features:

- 1) Presumed Untranslated 5' and 3' regions are underlined.
- 2) Potential TATA box transcription initiation signal is double underlined.
- 3) Putative Start (ATG) and Stop (TAA) codons are in **BOLD**.
- 4) Introns are tentatively assigned and are shown in lower case.
- 5) Exons are boxed.

GGGATCCTCTAGAGTCGACCTGCAGGCATGCAAGCTTCCCTCACCGTGACGTGCTAGAAATGGTTCAACATACTCGT
CCGGCAGAGCGAAGACGACGACGCGGAATGTCCAGGAAATGTAATGAGATATCACAGCAAGTGAACCCAAACCG
AGCTGTGCGCTTTGTGTGCGCTTTAAAAATGGCCCTTCCCTGCGCATCTGCTTGGTTTCACACGCTTTCCCAAG
AAATCCACTGACCACTGGCCACACATCAACACCGGAGGAGCCCTCAGTGCCGAGCAAGCATATAATTGCTCA
AAAAGTCACGGTACTCAATTAAATTGATTATAATCAATTTCGTGGCTTCCAAACACACCCCTTCTTCCACAAATCCATCG
CCGAGTGAGCGAGTATAAAGGTGAAGAAACGTACCTTGCGCTTGCTCACTAACTGAACCGGATTTCAAAAAGGAACA
TAAACCGCAACCCACAGCCGAA**ATG**CTGATCGAAGAGTGTCGGATAATTGGTGCAATGTGGAGTGTGGCTGTTC
TGGTCGTATCTGCGGCGCGCGGTTGTCCCGCTTCTGGTCGGCTGCATCCCGTGCGCTGAACGTTTCCCA
GTTCCCTGAAGCTGTACTCGTCCTGGGCGACATGAGCGAGCTCATCAACGGATACTTTACCGTGTGACTTTA
ACCTCGTCG**l**acgtgggcgaggggaggggcaataacctcccactgggtggatatttcataacctttccatgtgtt
ttttattctctgtttgttgccatccag**CTCCGAA**CCCTCCCTTCTCGTGATCAATCGACGGAAATTTGAGACATTTT
TTGAAGGCGTTGCCGCCGAGTACGCTCTCCTCGAG**g**taagtcattgggttttctagtttttggggagttgtttaca
ccataaccacccccgacggtaacatttgatcgccccgcaaaatgtttgtacag**AAAA**ATGACGACATCCGACCCCGT
GCTGGAGCGGTACACACGGCGGGACGCATGCTATCGATAATCGAATCTGTGGCTCGCGCCCTTCATTAGTGCCTGCT
TTGTGACCTATCCTCTGTTTGTGCCCCGGCGGCCCTACCGTACGGCGTCACGATACCGGGCGTGACGCTGGCC
ACCCGACCTACCAGGTCGTGTTTGTGCTGCAGGTTTACCTTACCTTCCCCCGCTGCTGCATGTACATCCCCTTCAC

FIG. 2A

CAGCTTCTACGCGACCTGCACGCTGTTTGCGCTCGTCCAGATAGCGGCCCTAAAGCAACGGCTCGGACGCTTGCGGC
GCCACAGCGGCACGATGGCTTCGACCGGACACAGCGCCGGCACACTGTTGCGCGAGCTGAAGGAGTGTCTAAAGTAT
CACAAACAAATCATCCAGtaagtagacgctagtagactcgaccggattgcccttccctcggggagggaggttctgct
attcgggatgcggcagcgcatacacacaaacgggaagccattaatctcccgttttcatgcccgcacgggcact
gggtcatgttcacatccttcccttccaaacacacacgcgcgctgcacgtacatATATGTTTCATGATCTC
AACTCACTCGTCACCCCATCTGTGCTGCTGGAGTTCCTGTCTGCTCGGATGATGCTGTGCGCACCTGCTGTTTCTGCT
AAGCATTGtaagtaaaatcgaccgacgtgcggtcgtagtcggtcctcggactctcatttcgggactcaatcgttcc
atctctcaataadAGCAATCAGCTGGCACAGATGATAATGATTGGATCGTACATCTTCATGATACTCTCGCAGATGTT
TGCCTTCTATTGGCATGCGAACGAGGTACTGGAGCAGGtaatggcgctgaagctgagtttgggtgagcgggttcgcta
tagatcggctgtcttacattgttgtgttctgcattgggacggttttgggttctcctccatttcadAGCCTAGGC
ATTGGCGATGCCATTTACAATGGAGCGTGGCCGACTTTGAGGAACCGATAAGGAAACGGTTGATTCTAATTATTGC
ACGTGCTCAGCAGCCGATGGTGTAAGtttggtgatcgatgctctgttcaatgaacatggcacagaaggctgtgta
aatagctgttcataataaagtttttcagaatgtatcgtttttagtgtgatttaaacgcatgttctatgcaatggta
gacaataagaccgctttattaatccaagcttccttaggattgatttttattttaagagaaaagataaaaccatttt
tagtaaccaatttagttacaggaaccaaatacacagaatttattattattattattattattattattattatt
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gttgttcttattattgttgttcttattattattattattattattattattattattattattattatt
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FIG. 2B

ttccagtaatccataataaaaaataaagtaaaatagtaaaatagtaaaatccagtaactgtagtaatac
acaataatctctaagaattaaaaattgcatcttgtaatgaatatgttgattgttcgaatagttcagaaaaacttaaa
aatgcctcagcattaaacagttttgaggtgttgcaggcatttagtttagatatttagtatatttaaagcatattgtt
ttcattactacaaaaagcaaaatttatgagtgaattactttcagttcttctaaacgcctatgtgtatgcaattacat
aacaatagctctctttttattgcatctttccttagtaaatcctaattcctctcttccctcttgcaqATTAAG
GTCGGCAACGTGTACCCGATGACGTTGGAAATGTTTCAAAAAATTGCTCAACGTGTCCTACTCCTATTTTCACACTGCT
GCGCCGAGTGTAACACTAACTTAACCGGTAAACAAACAAATCCCCTCATCACTATGCAAGACAGCAAGCAGCC
GATCATCAAAACACCATTAGCAGCCACAAGTTACCAAGCCGCTTATCCACGGGATTGGTGGAAGTTATTGCACCTG
AAGCTCTTTCACCCAAAATTTTCATGGAGGTTCCCTCTCAACCAACCCCATGAAGCGAATAAAAGTATCAGCAACCAG
GCGACGGTGAAAAACGCTGCATTATTGTGCTTGTTCGATCCGCCGAGTGCACTCGCAAGCCGGTGATGTTGCCGGT
AGTCCGATGCTACGATACGGAGCGGTGTGTTGTTCCGCGAGTGCACTCGCAAGCCGGTGATGTTGCCGGT
GGAATGCACAGATCGACACAGCGATAGATAATCGTTTGTTCGCGTAAATGGGAGGGAATAAGTAAAGTGCACGCT
ACTTCATTTCCATGTTAATTGAAACTCAAGCCACGAACATGCAGAACCCGTTGGTTGTGTCTCCGCTCCGGGA
AAGTCTCTGCTCCGGGCGATGGATTCTTTCCCTCCGGGTGTTGGGGTATTGTTAGGTTTATTATTACAAA
TTCATATCCTTCCGCTTCCGCTCAGCCGACCCGGTGGTGCGCCAGACAGATGTGCGCGGCAACAAACTATGC
ACGAACATGGCCAAACAAACACAGCTTCTATCTCATCTCTGTGTGCACTGTCTCGCTTCCCGCTGCTTGTGTA
GTACTATCATTTGTTTAGTCCACGGGTTTACTTCTAATTCCATTGCACCCACGCAAAAGGCTCATCCTTTGCTCGTT
CCGGTTGCAACTTCGACAAAGCGCATGGTTGGGATACGAACAAAAACCACTACTCCACCCACTACTACTACTG
CCACCACCACTAACACACTACACTTGGTTGGAGCTTGCAGACCCCAAGCAACACGATACAGCTAGCTAGCT
GCTGTGCGCTCGAGTCAGCCGACGTTACAAGGTTTAACCGGTACAAGCAACTCCCGGACCGATCCCAAACTCTG
ACAAGCACGGGCGCATCCGGCAGTACGGTCGGAAACATGGAATGTTAATTAAACTGTAAATGTCAATCGC
TGCTACAAGTTGTGACACAGGGAGAGAGAGACAGAGCGCCCGATGGTGATGGTGTAAGATAGATACAGGAA
AAGAGCGAGAAACATTGGTACGATTTGGTGTGGTTAGCAAAATTTGATTTCCACTGATTTTGAGTGCAAAATTTAATGC
ATCGAAAATTTGCCATTTCAGGGTAAAGTTGCTCGTGGACGGATCCCCGGGCTGCAGGAAATTCGATATCAAGCTTAT
CGATACCGTCGACCTCGAGGGGGGGCCCGGTACCCAGCTTTTGTTCCTTTTAGTGGA

FIG. 2C

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FIG. 3A

FIG. 3B

FIG. 3

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Anopheles gambiae odorant receptor 3 genomic sequence (SEQ ID NO: 11)

Features:

- 1) Presumed Untranslated 5' and 3' regions are underlined.
- 2) Putative Start (ATG) and Stop (TAA) codons are in **BOLD**.
- 3) Introns are tentatively assigned and are shown in lower case.
- 4) Exons are boxed.

AAGCAGACACATCAAGAAGCAATTAGGIGTGTCTACGTAGCAAGTAGTTCGCGAGGAGGAATAAAATAG**ATG**CCC
TTCTGAGCGGCTTCGTCTCATTACTTCCCTTCGGAACTCCTCAAGACAAACGCACGATGCTACTGCCAAAATTAAGG
ATGAAACAGCAGTGATGCCGTTTCTGTGCAAAATTCAAACCAATTGCCGGACTGTGGGTGACCGTTCCACAGCGGTAC
CGTTTTTATCTCATCTTTCCCTACTTCTGCGCGATGGTGGTTCTACCCAAAGTGTCTTCGGTTATCCAGATCTCGA
GGTTGCGGTACGCGGCACGGCGAGCTGATGTTCGAATCGAACGCATCTTCGGCATGCTAATGTTTCCCTTTC AAC
GCGACAACTACGAGCGATTGGTGCATCAGCTGCAGGATCTGGCAGCTCTAGgtgagtatgcagccaatcgattgttc
caaacctcgcaacatccttcgtaacactgctacactttcagTCCTCCAAGACCTACCCACAGAGCTGGGAGAGTAC
CTGATCTCAGTGAAACCGACGGTTCGATCGGTTCTCCAAAATTTACTGTCTGTCACTTTTCCATGGCAACGTTCTT
TTGGTTTCATGCCCGTCTGGACGACCTATTCCGCCCTACTTTGCTGTGCGCAACAGCACGGAACCGGTCGAGCACGTTGT
TGCACCTCGAGGAAGAGCTGTACTTCCCTGAACATTCGGACTTCGATGGCGCACTATACGTTTATGTGGCCATTATG
TGGCCCAACGATCTATACGCTCGGGTTTACCGGTGGCACAAGCTGCTGACCATTTTCAGCAATGTTAAGTACTGTTTC
GGCCATGCTGAAGCTCGTTGCACCTCCGAATCCACTGTCTAGCGAGAGTAGCGCAAGACCGAGCGGAAAAGAGCTGA
ACGAGATTATTTCCATGCATCAGCGGGTACTCAAgtaagtaaatcaaatgaaagtttgcagggaataacttgag
tgtgtctgacccgtgcacatcctadCTGCGTGTTCCTGTCTGGAGACGACATTCCGCTGGGTATTTTCGTGCAGTTC
ATTCAGTGTAACAATGATCTGGTGCACTCTCATCTCTACATAGCGGTGACGGtaatagcatttcgtcatttcgta
GcctattcaatccatttttgtgaacgtgaatttccccagGGGTTCAGCTCGACGGTAGCGAATGTATGTGTCCAG
ATCATTTTGTGTACGGTGGAAACTTACGGCTACGGCTACTTCGGAAACAGATCTAACCCAGGAGTGCTTTGGGgtacc

FIG. 3A

cttggatgaagctcaaaaagtaattccaaattctgttttcgattttcccctttccactagAGCTATGGCGTTG
CCCTCGCCATTACGATAGCGAGTGGTACAAAGTTTCCATTTCGATGCGCCGCAAACTTCGACTGCTACTGCAACGA
TCCCAAAAACCGCTCGGCGTAACGGCGGGAAGTTTCGCTTCGTCAATGTGGCCCAAGgtaacattaat
tacagtttgaaaattctgaagaatgcattacttgcttacttggttccagATGCTCAAGATGTCCCTATTTCATT
TTACGTAGTACTGAAGGAGCAGTTT**TAG**GAGCTGCTGTTTCCCACCCCTGGAAATGGCCTTTTCGCACGTCTTCTGT
TTGTTGGACGCACGCAGCACCGAGAGCGCCCTGCACGCACTGACGTATTTTGGCTACTTTGACGTTTGCACCTTTG
ACAGCTGAAGGACAGGGTACAATTTTTGCTGCTGTATTACGCGCAGCGCATTTGGATACGAAAAACATTGGCCACAAG
TTCTACGATTTTAGCGTTTATTACTGTTCTGTAGCAGCTTTTTCaCAATAAACACACACAATAACGTACCGACAG
TATTCTTTTCATTGTAGGATAGAGAAAGCCCGCCGAGCAGCCAAACCGCCGCAAAACGAAAGCGGCACCCACCG
GGGAAAAACACGGGAGCAAAACGAGAACAGAACGAGTAAACAAACAAACCGCCCGGAACAAACGCGTGCCCGGAA
ACGA

FIG. 3B

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FIG. 4A

FIG. 4B

FIG. 4

+

Anopheles gambiae odorant receptor 4 genomic sequence (SEQ ID NO: 12)

Features:

- 1) Putative Start (ATG) and Stop (TAA) codons are in **BOLD**.
- 2) Introns are tentatively assigned and are shown in lower case.

GGGAACTCCCCACCGACGACGAGCGGAAAGCTAACGATGTGCAATTGAATAGTCATTAGT
AGCGTTTTTGCTCGCAACGAACCTTTTGACTTTTAAAGTTCACTACGCTGAGGACAA
TCAATAAATTAAATCGAGACCGTTGATGAGCAAAAGAAAAAATAATTTTACTGATTTTCATT
CGTCCATCGACTACATAATCATATAATATATGCCACATTTTATTATAAGTTTGTATCATTTTAA
AACAAACAAAAATGCATCCTTTCGAATATTAGTCAGGTTGTATCAACA**ATG**AAGTTTGAACCTGT
TTCAAAAATATTCTCCCGGACACGGTCTTATCCTTCGTGCTAAGGCTTTTGCATATCGTGCGC
ATGAATGGGCAGGATTTTCGGTCGCGAATTCGAGTTGGTGCCATTTTCTGTCTATTTAATCTT
TCTTGTAAATACCGCCACTAACGGGGGTACACCGATGGTCAACGCGTGTACGCACCACTGTG
GAATTCCTGTTAATTGCAATATTACGGCGGCAGTATGTTCTTTGCCCTACGATGTGGCCACTTT
CCAAAGCGTTCATCCAGGAAGTGAAGAGCCTTTCGGTTTGGgtaatatattaataaaattgcgttattgcat
catcattgtttctcttgcagTATGCTCACATTTCGTACAGACTAAAGTATAAGCTGACCCGGTTCAACCGTC
GAGCGGATATTATCGCCAAAGTGCAAAACGACCTGCATGGGTGCTGTAAACGCTTTTCTACTGGAT
TGCAACGATACCTTCATCTGTGCGCACTACTACAGTCGACCAATTCACCCGAACCCGTGCGG
TTTGTGCAACATTTAGAGGTGAAGTTCTATTGGCTCGAGAAATCGCACCTCAGTCGAGGACTACAT
AACCTTCGTGTGATCATGCTACCCGTCGTGTTATGTGTGTTACGTATGCAATTGTGAAGTGA
TGACCATCTGCTGCACCATTTGGACACTGTACACTGTACACCGGATGACTATAGAGATGGTAGA
GCAGTTGGAAGCATGGCATCAGCGGAACGAACTGCCAGCGCCATACGCAACGTGGGGCAGAT
GCACAGTGGTTACTGAAATGCATTAGGCTTTTGAACACGTCATCCGATCGATGCTGATGCTGC

FIG. 4A

AGTGGTTGACCTGCGTGTAAACTGGAGCATTTCTCTCATCTATCTAACGAACGTGgttagttttgtctt
gttggaatccaaaaaagatggctataattgaactttctattacagG-CATCTCGCTACAAATCGGTACCCGTGGT
GGTAATGTTTCTTGCCACTGCGGAACCTTTCCTGTATTGTACTTGGGACGCGGCTTGCGA
CACAAACAGCAGCTGCTGGAGCACGCACTCTATGCTACACGGTGGTACAACTACCCAAATAGCCTT
TCGCAGCAGCATTAGGATGATGTTGAGACAGTCGCAAGGCATGCACACATAACGGTGGGAAG
TTTTCGCGTTAATTGGGAAGAAATTAGCAGGATTGTCAACTTATCTACTCTGCTTACGTCGT
ACTTAAGGATGTAAATAAGATGGATGTACAG**TGA**ATGTTTTCCTTGGCTTGGCAACGAATGA
AGTTTCGGAATCTATATTAGATCTAGAAATTAACTAGATGTCATAATATGATCTTGGCCATGA
CCGGTTCCTGGTTTGGAAACCAATTCTCAAAACAAATTGTGAACCTAGGGCGAGGCATGAAATGTC
CCAAGAACTATCCAAAGTTCTGGAACTACATATTACCGAATCTATCCATTTATGCTCGGAACCT
GGTTGGTGCTAAATATTGTGCCAAATGTGTGGTCCCTGGACCTATCCAGACAAAGATCTTCAATTA
TTCCTACCACTGGAACTGATTAAATTGATGTAGGAAGTCATGGAGGTGTCAGGGAGAAATTAAA
CACTAAATGTTCCAACTCATTAATTCAAGGGCAATTCTATTATTATATGCCCTACGGATGATAC
GTATGTATTACTCCATTTCCTGGACTTTGTCTTATTCTTGCTGCTGATTGGACGTGAAATGTTGA
GAAAAGATTCTTATTATGAGTGATACAGAGCCTTTAAATACTCCTACGTTGTTGCTATTATA
GTATGGCCAGGCTAATCACAAATCGCTACTAATGAACAGAAATCTCTTCTAATTAAACCCCTTTCGAT
TGATAGTGTCAATGTCATGTCGAGATAATTGAACCTGCAAACgATACCTACCTTAAACCGGAGCAG
AACACATCAAGAAAGCAATTAGGTGTGTCGTACGTTAGCAAGTAGTTCCGAGGAGGAATAAAAT
AG

FIG. 4B

ANOPHELES GAMBIAE

Preferred DNA Codons

Amino Acids		Preferred Codons
Alanine	Ala A	GCC GCG GCT GCA
Cysteine	Cys C	TGC TGT
Aspartic acid	Asp D	GAC GAT
Glutamic acid	Glu E	GAG GAA
Phenylalanine	Phe F	TTC TTT
Glycine	Gly G	GGC GGT GGA GGG
Histidine	His H	CAC CAT
Isoleucine	Ile I	ATC ATT ATA
Lysine	Lys K	AAG AAA
Leucine	Leu L	CTG CTC TTG CTT CTA TTA
Methionine	Met M	ATG
Asparagine	Asn N	AAC AAT
Proline	Pro P	CCG CCC CCA CCT
Glutamine	Gln Q	CAG CAA
Arginine	Arg R	CGC CGG CGT CGA AGA AGG
Serine	Ser S	TCG AGC TCC AGT TCT TCA
Threonine	Thr T	ACG ACC ACT ACA
Valine	Val V	GTG GTC GTT GTA
Tryptophan	Trp W	TGG
Tyrosine	Tyr Y	TAC TAT

[http://www.kazusa.or.jp/codon/cgi-bin/showcodon\(con'd on next line\)
.cgi?species=Anopheles+gambiae+\[gbinv\]](http://www.kazusa.or.jp/codon/cgi-bin/showcodon(con'd on next line).cgi?species=Anopheles+gambiae+[gbinv])

FIG. 5

Name	SEQ ID NO
Arrestin 1 (cDNA)	SEQ ID NO: 1
Arrestin 1 (polypeptide)	SEQ ID NO: 2
Odorant Receptor 1 (cDNA)	SEQ ID NO: 3
Odorant Receptor 1 (polypeptide)	SEQ ID NO: 4
Odorant Receptor 2 (cDNA)	SEQ ID NO: 5
Odorant Receptor 2 (polypeptide)	SEQ ID NO: 6
Odorant Receptor 3 (cDNA)	SEQ ID NO: 7
Odorant Receptor 3 (polypeptide)	SEQ ID NO: 8
Odorant Receptor 4 (cDNA)	SEQ ID NO: 13
Odorant Receptor 4 (polypeptide)	SEQ ID NO: 14
Odorant Receptor 5 (cDNA)	SEQ ID NO: 15
Odorant Receptor 5 (polypeptide)	SEQ ID NO: 16
Odorant Receptor 6 (cDNA)	SEQ ID NO: 17
Odorant Receptor 6 (polypeptide)	SEQ ID NO: 18
Odorant Receptor 7 (cDNA)	SEQ ID NO: 19
Odorant Receptor 7 (polypeptide)	SEQ ID NO: 20

FIG. 6

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FIG. 7A

FIG. 7B

FIG. 7

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Anopheles gambiae odorant receptor 5 genomic sequence (SEQ ID NO: 21)

Predicted Exons: *ITALICIZED*, UNDERLINED AND **BOXED**

Introns: lowercase.

tctagacttgaacccatgacgggcattttattgagtcgttcgagttgacgactgtaccacgggaccaccggtttatcactatcactatt
aattaattataatgctttttagcagcctaccgggttttctctggatatcttaagtcccatcttgattatcaagatagaa
caacaactgtaccttaataatacattacgtacccttaatacaacctgtgcatcaaggagtttcggaaagcaaaaatccgattgtct
gatgtgtcttgattccatccgattcgttactggttctgcaaaaatcgccaataatacggcaatgtccttattcgtgatgattgaatcaacat
cacattgttgcaattcgtttttggtgcaaatatgttattgcaaaaggcaaggtaatgtgcttaagagtaataacaattcgcctg
tccatttttgcaccagtggtgccagaacccgtgcttttagctcttcgaatacatccgaccagtcagcaagtgcatd**ATGG**
TGCTACCGAAGCTGTCCGAACCGTACGCCGTGATGCCGCTTCTACTACGCCCTGCAGCGG
TTTCGGTGGGCTGTGGGGTGACGACCGCTATCGCTACAAGTTCCGGTTGGCATTTTTA
AGCTTCTGCTGCTAGTAGTTATTCGGAAGGTTGCCCTTCGGCTATCCAGATTTAGAGAC
AATGGTTCGGGAACAGCTGAGCTGATTTTCGAATGGAACGTACTGTTTGGGATGTTG
CTGTTTTCTCTCAAGCTAGACGACTATGATGATCTGGTGTAACCGGTACAAGGACATATC
AAAGATTGgtgctgataatgattgataaaaaggaaacctttgagcaactcctatccttcaag**CTTCCCGTAAGGAC**
GTTCCCTCGCAGATGGGGCACTATCTGGTACGCATCAATCATCGTATCGATCGGTTTC
CAAGATCTACTGCTGAGCCATCTGTGTTTGGCCATCTTCTACTGGGTGGCTCCTTCGT
CCAGCACCTACCTAGCGTACCTGGGGGCACGAAACAGATCCGTCCTCCGTCGAACATGT
GCTACACCTGGAGGAGGCTGTACTGGTTTCACACCCGCGTCTCGCTGGTAGATTAC
TCCATATTACCGCCCATCATGCTGCCCTACAATCTTTATGCTAGCGTACTTCGGTGACT
AAAGCTGCTAACCATCTTCAGCAACGTGAAGTACTGTTCGGCAATGCTCAGGCTTG

FIG. 7A

GGGATGAGAAATCCAGTTCATGGACCGGCTGGACGAGCGGAAGCGAAAGGAACCTGA
TCGAAATCATCGTCATGCATCAGAAAGCGCTAAAGtaagggtctgccggtatgttgatagatacatatt
ctagctgctttcagATGTGTGGAGCTGTTGGAAATCATCTTTCGGTGGGTTTTTCTGGGACAG
TTCATACAGTCCGTAATGATCTGGTGCAGCTTGGTCTGTACGTCCGCCGTTACGGtaacta
aaagcaactgtagtctgtctgccacaccattcaactgctgtgtctgtttgttgcactcttcccagGGTCTCAGCACAAAG
CGGCAAAACGTGGGTGTAATACTGCTAACAGTGGAAACCTACGGATTCTGCTA
CTTGGCAGTGATCTTACCTCGGAGGCAAGTTGTTATTCTGCTGAgtttcagttacttttccgttccc
tetaaccgtaccattgttaccattgtttgagacagagcttgagcgtagCACGTGCTGCTACGGTAGCCTCTGG
TATCGCCGTTTCGGTTCGATTCAACGGAGCTTCGAATGGTACTGTCAGCGTGCCCA
AACCGGTCGGCATCTCGGCTGGGAAGTTTGTCTCGTCGACATTGAGCAGTTTGGCAA
TgtatggggagaccttccactgtggcaagaaagattttcttttattaatgcactcttttaattacagATGGCAAAACATCA
TACTCGTTCTACATCGTTCTGAAGGATCAATTTAAaggggaaactccccaccaccagacgacggaa
agctaacgatgtgcaattgaatagtcattagtagcgtttttgctcgcgaacgaaactaaccttttgactttttaagttcactacggtag
gacaaaaataataaataatcagaccgttgatgagcaaaaaaataattttactgattttcatttcgttccatcgacta
cataatcataattatgccacattttattataagttttg

FIG. 7B

$+$ $+$ $+$ $+$

FIG. 8

+

FIG. 9A

FIG. 9B

FIG. 9C

FIG. 9D

FIG. 9E

FIG. 9F

FIG. 9G

FIG. 9

+

Anopheles gambiae odorant receptor 7 genomic sequence (SEQ ID NO: 23)

Features

1. Predicted Exons (7): ALL CAPS, ITALICIZED, UNDERLINED, BOXED
2. Introns (6): lowercase
3. 5' and 3' sequences: lowercase, dotted underlined

ccgccccgggcaggtgacttacgcggctgacttgctggcgctgtgttacggcaaacggctacacaaagcgaatcgaattattttcc
tatcacgctgcgcttaccagcgctgctggtaggcaagaatgtgcaaaagtttcatttggttgcttgcttgctgtaacgtgtg
gcacggttgcatcgctaaggtttcggtgtgagccgagaagttgcagatcgaaaatctctttgtgtgtgtgtgcagtgggaa
gcatgtgttagtgagaagtgaaaagaaagtgtgaaaaatgcaagtcacgcgaccaaagtacgtcggecttcgttgcgcgaact
gatgccgaacaattcgggttgatgcaggccagggtcaactttctgttcggctacgtcacggcccgatactgataccgcaagggtgtac
tcctggtagcgtcgcccATGGTGCTGATCCAGTTCCTCGCCATCCTCGGCAACCTGGCGGACGA
ACGGGACGACGTGAACGAGCTGACCGCCAACACGATCACGACCCCTGTTCTTCACGCA
CTCGGTCACCAAGTTCATCTACTTTGCGGTCAACTCGGAGAACTTCTACCGGACGCTC
GCCATCTGGAACGACCAACACGACCCGCTGTTGCCGAATCGGACGCCCGGTACC
ATTCGATTGCGCTCGCCAAGATGCGGAAGCTGCTGCTGATGGCCACCACCGT
CCTGTCGGTGTCTGgtatgtgtatgtgtgtggcgtttgggaaagtgtctttgcggaacccaatctactgttacgc
ttgactgggttttgtttttctcgtggagcgggataaaaatatctgaaagaataattgagtcacccacaggggatgcaag
acatcgaggcagagatttgggttgattatcacccgacacccaataatcttcacggttcataagcttcaccgcggtgaaaaagga
actccccattccctgttttcttttctctctcgataaaattactcatcgctttctgtttttttttgttggctcttcttcttcttc

FIG. 9A

cctactagCCTGGGTACGATAACATTTTTCGGCGAGAGCGTCAAGACTGTGCTCGATAAG
GCAACCAACGAGACGTACACGGTGGATATACCCCGGCTGCCCATCAAGTCCCTGGTATC
CGTGAATGCAATGAGCGGACCGCGTACATTTTCTCTTTCATCTACCAGGTACGTTG
GCGGAATgtcctgcggtcacagtggcagtcagtgagcggcaacacggcgaaataaggactaaaaccgggtcttcacaga
gccaacacattctacagcaattgcatacttcggcggtcggaactgggcaatgcagctacaacatctctcgctaaagtatatgcaat
tcgagcgacaaaatgttgcggttagggctttttgtgataatagtcgtttttgtctctcgtctatacaaaactctatcaacggagga
tccattttcgctacaatgcctacagctcaagtttcaaggctcaatcgagcgggtgggatacaactttttattcattttgtctaaacgcccc
tcaacaaattctatgtttctcaatggcaaaagattactcccgcacaaatcgccccaaacggcaaaaagaaagcgacgattatga
agatgtccaaacacattgccccgcgacgctttatctgatgatttgcgggagtggttttacttctgtctactttcaggcacaataaggaa
atgaaaccagcgagctcgtttgcggcttgagggttcttcaggcactgaggtactaaatcgaaacgatttttacgattc
tggatccagttttatgatgtggcctgcattacagtgggcaattataacctgatgttccatttcatttgaagtttgtgtggttaacg
cccgtaacgattaattctttcaaaagagattctttcaaaagagattcacaatctctgcataacaaatgctaaacgaatggaccgtacttgg
agggttgcggaaagtaacgttttaaaatattccatcacaaatctctgcataacaaatgtgtcttaattaatgtgtgcacaataagtttaaac
gtggcggcagatgtgtcgtcgtcgtctctctctccagcaagctcgtgcgaaataatttattccatcattttaatacagccgtttgtg
cattttaattagcaaaagcaataataaaagcagctaaacccattaaacaaagtgcttcgggcccaattgttatggcgttga
aagtaatggttttaccagtggaagtctcttcccatcgtgggtacttcgcgatatcttgtcttatacaagtgcatcacagaaaaaa
ggacaaaatctctctgtatggtctaaaggccagcttcgggtaccgcttcgggtatgcataaagtttgatgggtgtttttaacatt
actccgctcttaaccacctaattggactttcatgttgagctaaagttaaacccagcaggtacgaccagccagcaggttgatt

FIG. 9B

FIG. 9C

+

gatagcaaacacacaaataatctctgataataatctgatgtgtgtattgttgatgtgcctttgccatct
tgccctctctctgttcaactcctaaaagaattgttggagtcctctcagttcctgtaaagatccttgcgagattcttctctctttt
attatttattccagagcctctgacataaagtagcctccgcttatttctctccttgcaattgtcagttccgtagagcgtcattttgag
gttacacatttcccacgcagcctgattgttacattgtcatctacattgcttccgttaccgttccgcccccttttttaacgctaccaca
gAAAGGATCCGGACGTTAAGGACTTTGATCTGAGCGGCATCTACAGCTCGAAGCGGG
ACTGGGGCCGCCAGTTCCGTGCCGCTCGACGCTGCAACGTTTCGACGAGAAATGGCAG
GAACGGAAATCCGAACGGGCTTACCCGGGAAGCAGGAAATGATGGTGCGCAGCGCCATC
AAGTACTGGGTCGAGCGGCACAAAGCACGTTGTACCGgtaggtatggtaatttctaagggtggtgtaaag
cctccagggtccatgaaaaagggatactttaccacagtaagagtttgtttgtctggacttacattcttggagcattgtttgggtgttg
ctgaaacccggttgcaatatatcggttttgcgaagaattatgtgtaaagcgtattacaatctcctctgttaatctgtaccaattgtgtc
agccccgaccgaaagcaggcctaattcgtaccagaaaaaaccaagctgtttgtaagcatcgatacgcgccgaagcttcaatccagc
caaggcgccactactattgacgtgacttttgcagttcacactctcctctcccattcttctataaccaatcgctcgtcagccagcat
cgccccgagtgagttttatttgaacgatatcacccgctatcgattttccactaaacatgcttaaatcgttcacaaaagctcccccaa
atccatttcaccaatccaccaatttgaagtcgctgctcttgtgtccttgtgttgtgtgtgtgtgtgagctggagacatgggggag
gagtaaccgaaacaccttgcgctgtcttcacgatatcgaaacagcaccaagataagcatcccttttccctagccgatgtctccgata
tctcgattccgcttcagcgaagaaagaaagcgaactggctgacctcacccggggcgaggaaaaagcgtaggattacgctc
gagcagcacgagttgtatttcttcttcttctgttccataaaatcgctgacggttccattaccgctgaggagtgcacacacgtgaag
ggaaagcgaaaaacgttttagattccagcagcaacggcagcaccagaagcagcagcgcgcgcaaatggaatcatcctgacgcgat
gagttgtctgggtttcgggtcggtggttacagcacacacacctctgctgcagctaatacagctgtaaatttcgttagacatagactt
gattttacaataattacacacacacttacacacacagctatagattgtcgttggcgtatggctctgtacggcgtgccgtacatgccgc
gagccgtgttgcgtggttgcgatacggatacagtcagtcgattcgattcagcctgcgtgttttggtaagatccttatacggtagccact
ttcagtggtcgagagcgagggtcactatggcgcctgtcagttggaaaagctaggtcgatcgaaggccattgtgccagtggttctt
ttaagatagcgataaagcttttgatcgaaaatagtaaatgtaaatgttttcttctattccaaaactgttgccaacctcattattacg

FIG. 9D

tttttcagcgggtatagtaaatgcatactttaaggcgtattttcaaatgtagcgttcgtagcagaaaacgccatggattatgc
aatttaaacaaatgctctcttaacattcaataaacggcttattaaggaactttttgtgcaattttgttttaacagcaaatagtagc
tcagaacgatcacatttagtatcgcttcaacaagaactcttttaaacacacacaatttgtaatgccattccctcgagaaagtcttctgtc
agtctctcttgcatcacagcaacaacaaacctgctcatgtttctctgctctgttttgaacgttatctccgattcctgtgct
tgccccgttttcttacaatcaaccacaatggttcagatttcgctcttattttattgacccactgcttctgctgaagccccgtggaacaa
tgcgccaagctcagcatccagccatgcatgtaaaatgagccacgcgacagatttttagacatcgcttctgctctgcacccggagggtgtt
ttattctgtttccgattccacgtccattgctctggtcgccggcccgaaacccgttaagccgtgcggggaattacgcaatcgaa
aacgagccagaaaatgagcacgcgcaaatgcaaaagaaaatcccccttttgagtggtgctctctgccaccactcatctccccaaactggtgg
gtgaaaaaccttgtagcccccttctctttccagaaaaaaaacgcctcgctcgcaaaaaaacatgctcgccccgggtgaagctgcgtatgt
cgcaagaagctcaaaccaacgcgcgcaagcatcaacaatttctattcaaacaccccaacgcagcgccccaaacccgggtgcactgta
ctcagtagcgaagatgctcagattgtccccgtgcgtcttctcgatgccccgttcggagcggaagccatcgcttgccaaacgttggcgat
gtcttttagccgtgattgaattttctgaatatcacagcgcgcggtttgctcgcaaggttggttgccttcccacacgagcattgcttt
ccgtaccgcggtggggcgagttttcaacgcgaaccttctacaagcaacgcccaacgcctgggagcgatatttaacagaaaacaaagaa
catccccgaacttcagcacatgcctgatttgctgttggaagaagcttttgtagcgtgtgagttgaaacgagctctattttccagcgat
gggtggcatttggtggcatgctatcgtagcgttttcttgaatctttacctctccattcgctccattagtagcacgcgtatgggaaaatgg
gtgcaacggatcagaacggattttccgcgcagagacttaataaagggaagcaacgcgttttttgcatgtgtatgtttatgagcctt
atgccgttactttgcaattaaaaaatagcaaaaaataaacagtttttttgtaagcggattacaagaagatgtatcagaatatattacgtg
aaacattcatttcagtgttaacgctcaaatagaaatagttttgttaacacggattgcataaccttgccggtagcggttacatcttcgccta
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aaaaaaatgtcaatctgtatcgattattcacacaaaatcagatccccggaaccagtgtagccccaatgtgctcttattgaaattaccacga
acaaatcaacctgatccccgggtccgttggaacacagcttgccggaagccgctcagtggttcgtgcactacccgtgctgccattttgct
gacctcatcgaaacagataaacagaaaggcaactcttgtagcatcgcaatgccccgtctgaagttccgtcgaaaaatggggcctaattc
aatttgacgcatttaccgcgaacaattgcgcgaaggctgtcaagtggtttccacgaactcgacaacaagcacacacacacacac

FIG. 9E

aaatgttatcgttttcggcatgtttctcgggtacaaaagcgtgtggcgctatgtggcatcccgattccagacagagtgatcgatagtaaa
tgtagcctatccggtagcattcaatbctcttctatcctcgcacaaagccattctggggaggcgtggtgaagctttcaaaaggcat
tgtgaaaacaaatgtcctcgttcggaggatcgtggggaagcaaacacgggtgcgccatcgctgtaccgtcaatcgatcatgcatg
atgtgattaaatattgtgtattacactgcgtatctatgcgtcgtgtcgttcggatttccggaagtaaggaaaaagcgactcca
tttgggattggttttgcagcgaatacaaaaacattcgcacaaaaccgtccctccatttcaaatgcctacactgtcactgtatatctct
cttctctcgtttggcacgttgcaagTCTCGTTTCAGCAATCGGAGATACGTACGGTCTCCTGCCCTGGCT
GCTACACATGCTGACCTCCACCATCAAGCTGACGCTGCTCGCTACGCTACGCAACGAAA
ATCGACGGTGTCACCGTATCGGTAATCGGATATTTGTGCTACGCGTTGG
CTCAGGTTTCCCTGTTTGCATCTTTGGCAATCGGCTCATCGAGGAGgtacgtgcgctcgcgctg
ttgccgtgggaaagcattctccctgccccatategcttcattctcccagatcacacatttgcatacaaaagccagcacacttttgcttcg
ccgtgccatctcggcttctgaatgttttcacttctcccatacttctccgtgcagAGCTCATCCGTGATGAAGCGGC
CTATTCCTGCCACTGTACGACGGGTCCGAGGAGGCAAAAACCTTCGTCGATCCGATCGTT
TGTCAGCAGTGCCAGAAAGCGGATGACTATTTCCGGAGCCCAAGTTTTCACCGTTTCGC
TCGATCTGTTTGGTTCGgtaaagtgtagcctgggtggcgacagaaacaggctggcaaaacaggactttggctctagc
ctgatgggtgtatatgtgtgtctattttttgctaccattctcgcacacctctcttccagGTTCTTGGAGCCGTTGTTCAC
CTACTTTCATGGTGTGCTGGTGCAAGCTGAAGTAAacagccgtggccgggaaggatgtgttttttctcgctcgcttcg
gttgtgtgtgtgcacacttctcttggaacattttctctactgcaaaagggtttaacaaacagcaacaaataataatcccaagttttctttt
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tggtaaaagtagcaaaaaggacgttggaattgaaaccacagaaagagtgatatattatgcaaaagctcaccaagggaatactatgat
gtgtgatttgcgctcatcaagcactgtatgtgcctttcaactagtcagcaataaaagagtacaaaatgtttcttagcgcaccgtaacttg
tcgtttcggcggttttaaccgttgttgataatacacaaaaagatgataaaaaataataaaaaatgtaataatagtaagtacta
aatagagaaaatcggttttagtatgatcatcacctccaatcattgttttgaaaataactttaactcaaaataaaacggatgttttact
ttctgtgagaattattgtggaagaacttaataatggaagtataataaattgattgctaactttatgcgtttttcaatttacgaacgctagt

FIG. 9F

cttcaaacatcgcttcaaaagttactactaccacattattcatttacttatagttatatatttattgacctcttcatctttccatggccagaact
actgcagaaaagcttctttttgctcgctttccgatggttggttgacgaagtggtaacaaacggcaagcaaataggcataaaactatt
ttcgcatcagagatggaaatgaatgtaccactagaaacggagtgaaatgaattacttttcaacttgcaacgccaataaacattatctaaag
tacgcacaacttaaaaaacaaacccccaaattgtcgtccacccttcattccactttctgtctacactttccgaccgagttctgtagcggccag
cagcaaaaaatacatatataaaaccttcactcaagctgtatcgagccagcgtgggttggtttgactgtgctgtgaaagaaaaga
agaaaaaaacacacttccacgggaagctagcaattggaaatgcataaattacgggaagaaattcgcaaaaaccccgacccgac
gtaccggcacccgatccgtaccgataccgggaacaaacgggtgtgcgcgaaagaaatccgctagcagccccactggcacgggtatttgctt
ttgggttctgtgtttttcttccactgggttgggtggcctggcggaaggctagctcggtactttccgggggcccgaattttctgcagcccgaag
gcggcggtgctcgtggggcccaaaagaat

FIG. 9G

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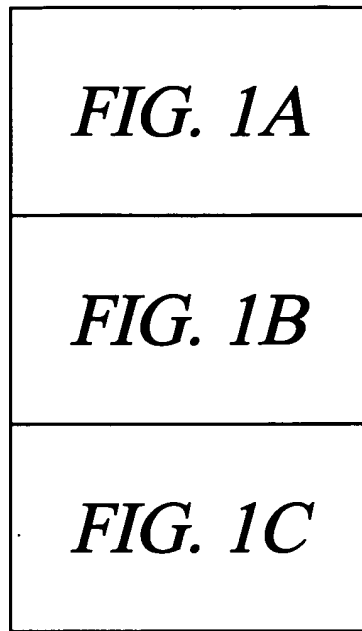


FIG. 1

Now 1A, 1B, 1C
due to
enlargement.

+

Anopheles gambiae odorant receptor 1 genomic sequence (SEQ ID NO: 9)

Features:

- 1) Presumed Untranslated 5' and 3' regions are underlined.
- 2) Potential TATA box transcription initiation signal is double underlined.
- 3) Putative Start (ATG) and Stop (TAA) codons are in **BOLD**.
- 4) Introns are tentatively assigned and are shown in lower case.

Exons are boxed — was highlighted

AGCTTTGTTCATTTATGTTGAAATCTAGCCCATTTTGTATAGTGCTGAACGACGAAGAACATACGAAAGTACCTCGT
CCGAACACTATCAACATTAATATACCAAGCTAGAGAAGATATTTATAGTCAAGCCTCAACATCATAGGAACTTT
AGCAAAACCATTTAATTTACATGATGATAAGTCCACCTCTTACCCAGCACAGGTTTGAGAAAGGACGAAAGTATCT
TTACGATAAATATTACTCTAAGGTAGTTTTTGAATAAAATAAAATTTACGTGCAAGTGTGGCATCGGACATCATTC
GAAAGAACTCTAAGTCATACACACACCCCAAGACGACCGTAGTTTCACTCTAGAAAAAACGGGTCACTCCATC
GAACACGTCAGGACATAACTGCGACATGCGTATGGTCAGTTCCTAGTGCCAACTGGTTCAGGGCACTACCTT
CCGAAGCAGTAGAACCTAATGTATTGGAAATTTATAGGACATACTGCAACATGCATATGGCTAGTTCGCTGGTACC
AACGATGGCACCCAGGACACTATCTGCGGCTTGTAATACTCACTGTAAATCTATACAAAAACGGCTTTACCCATACT
TTATCACAAAAACGGCAGGTGAGGGCTGGATTGCTTCAAAGCATTAGAAATATAAATTTCAAAGTCCATAAATCTCC
TTAAAAGATAGACAaCAGTAGAGAAACACATTTAGTGCTCTTTTCGTTTCGAGTTAGTTGCCTTCTCAAGTAAGCGTTT
AATGCTCAATTGTTGTAGATTGTTGGATGACTCTCGCTACGTGCTATAGTGGTCAATACTTCCAATTAGATTTCAT
AATTAGTTTCCAATTGTCCACGGAAAACCCaCAAAAGAAAAAACTTGATCTAGGGTGGAATTTTTCGAGAACA
ATTGGACACTTCAT**ATG**AAAAAGGACAGCTTTTCAAAATGTAAATAAACACCGTTGGATCCCTTgttgatttca
attctccaaattctgcagaataattctgcaaaattttacaaaactgctcaaccaccaataattccaattaatcatctg

FIG. 1A

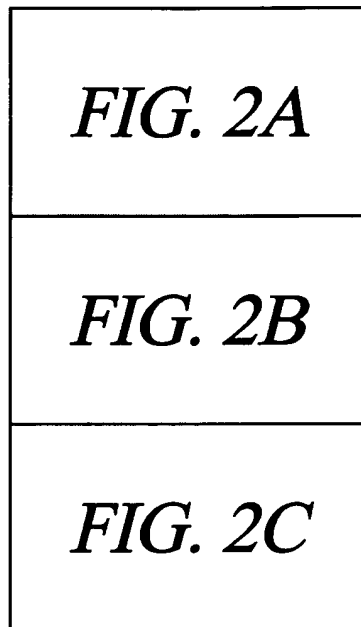
aacattaaactgataattaagatgagtaattgcttcgtcatcacctaagaaatcgattagtttgataaaaaagaa
caaattgaaatacaataaaagtcctgaattttattcgaataaacggttgaaactcatttatttcaaaaaacctttgaga
aatcctcgttgaaaaattggtctcctatagttctgctaacgggccacttcaaaagcaagaaactaacaataatcataat
tatggtgcaagtaactatcagtaaccagtaatcgccattaaaaactttcctcaatttgcggtctgttacccggctaaa
tacagagcagagtaaacgggaagtgatcaacgtcgctattagataaacgaggaacgccctccgaagggtgtgtgaagg
accttttcaaattgaaaccaaagtactgtttccagttttaaattggatagttataaccgaaagtaataagagctgaacaaact
catcatttgagtttcatctcgaggagaaatagatcagtgccactgtttaaccgaaagtaataagagctgaacaaact
gaaccacggtgggatgcgtacgatcgacgggattcgttctggttgcagttgcttgttgaataatttagGCCTAT
GGCCACCGGAAGATACGGATCAGGCAACGCGAACCAGGTACATCGCGTACGGTTGGCTTTCGGGATCATGTTTCTA
CATCTGTACGCTCTAACGCAAGCCCTATACTTCAAGgATGTGAAGGATATTAAJgtgagtcctctagtagctattag
tgttccacctgtccataatctgtcttttattgggtadGACATCGCAAAATGCATTGTTTCGTGCTTATGACTCAAGTGA
CGTTGATCTACAAGCTGGAAGTTTAACTACAACATCGCACGGATTTCAGGCTTGTCTGCGCAAGCTTAACTGCACA
CTGTATCACCCGAAACAGCGGAAGAAATTCAGgtaagcctgctgggaaatatgactaaaaagagtgctaacaacga
ctctcctccaaatgtagCCCCGTTTACAAATCGATGAGTGGAGTGTTTTGGCTGATGATCTTTCATCATGTTTGTGGC
TATCTTCACCATCATCATGTGGGTATGTCCGCCAGCCTTCGACAAATGAACGTCGTCGCCCGGCTGGTTCC
CGGTGGACTATCACCATTTCGGACATAGTGTACGGTGTACTGTTCCCTGTATCAAAACCATTTGGAATCGTCATGAGCGCA
ACGTACAACCTTCTCGACCGATACCATGTTTTCGGGCTTGATGCTACACATAAATGGACAAATTTGTGCGGCTTGGTAG
TATGGTTAAAAAGgtgagttacggcgactacttgccctccagtaaggacaggagtttgttccgttatgatcatt
ttatcadCTTGGACATGACGTCCCTCCGAACGCCAATTGGTCGCAACGGATCGGGAATGGAAAGAGATCGGAAAGC
GCATCGACCATCACTCCAAAGTGTACGGTACGATGTACGCTAAAGTAACGGAGTGTGTGCTGTTTCACAAGGACATC
TTAAGgtacgaattgggcccatttaatttgtgtcatttaaaaagcttgaccccaactttcacagcttcggcgatgaagt
gcaggacattttccaaagGATCTATCTTCGCGCAAGTATGCGCGTCTGTAAATTATCATTTTGTATGACACTGCTGCAAC
TACCGGGGgCGATGTTACGATgGCCGATCTGCTGGGCTGTTGCTAGTAAaGACATCGCAAGTGTTTA

FIG. 1B

TTTTCTGTACGTAGGGAATGAAATCTCCTATACGgtaggttggacacgtagaggaattaaatgtttgggaaagaata
tcaataaccaaatagtagtggttcggttacagACGGATAAATTACAGAGTTTGTGGGTTTCCCAACTACTTCAAG
TTCGATAAGCGTACCAGCCAAGCAATGATATTTTCTGCAAAJgtgagatagcgggtgtattgtgcagtcagtaca
ttaaatacggttctctatttcadGACTCTTAAAGATGTTACACATCAAGGTGGGAAGTGTCTTGAAGGTTACGCTAAAT
CTTCACACATTTTTCAGgtatgttaattatgctgtggtatttagcttgaaataaagctacaaactttgaaaagtaattt
caatcgttttgtaATTATGAAGCTATCGTACTCCTATCTGGCCGTACTTCAGAGCATGGAATCAGAGTAATGGtG
tTAATATCCtTAATGTTGAAATTATATTTTGTAGATTTATTGCATAAAGTAaTaTTTAATTTTATACATCAAACGT
AAGCCCGctaGTTTCAATTAGCCTTTTCCAAAATTATCAAAATTGATTCGAATTGATTCAGAGTTTCAGGAATT
TAATCTGATAGGATATCTTGTATATCCAATAGAGGTGTGGAAGCGTTCCCAAGCCATTCTGTTGATAGTTTATAGCA
CCGTCGAGCAGTTGATCGCTGTGATCGCTAGGCGCACCTGATTTTATCTTATCTCGCACCTGTATGGCAAGGCGG
CTTTTCACACGTTTCACACAATAATAATGCACATGTATAATGCATTTTACTTTAGCATTTTTGTACATAATAACC
AAAATTATGCATTTTATTTCTCACGCAACGATTAGAGGATGACTTCACAAAGGTCCATCTAGTGGTAGGAGGTATAC
AATTATACCTCTCAAAATCTCACAGCATAAATGAGAAACAAAAGGATACCAAGCATACCCTTTTCTTACTTGACAATT
TCATTGATTTATGTAATAAAGCACTGCacGTCGACTTCCTAAA

FIG. 1C

+



now 2A, 2B, 2C
due to enlargement

FIG. 2

+

Anopheles gambiae odorant receptor 2 genomic sequence (SEQ ID NO: 10)

Features:

- 1) Presumed Untranslated 5' and 3' regions are underlined.
- 2) Potential TATA box transcription initiation signal is double underlined.
- 3) Putative Start (ATG) and Stop (TAA) codons are in **BOLD**.
- 4) Introns are tentatively assigned and are shown in lower case.
- 5) Exons are boxed. — *exs highlighted*

GGGATCCTCTAGAGTCGACCTGCAGGCATGCAAGCTTCCCTCACCGTGACGTGCTAGAAATGGTTCAACATACTCGT
CCGGCAGAGCGAAGACGACGAACAGCGGAATGTCCCAGGAAATGTAATGAGATATCACAGCAAGTGAACCCAAACCG
AGCTGTGCGCTTGTGTGCGCTTAAAAATGGCCCTTCCCTCGCCGATCTGCTTGGTTTACACGCTTTCCCGAGG
AAATCCACTGACCACTGGCCACACATCAACCACCGAGCGGAGCCTCAGTCCCAGCAAGCATATAATTGCTCA
AAAAGTCACGGTACTCAATTAAATTGATTATAATCAATTTCGTGGCTTCCAAACACACCCCTTCTTCCACAATCCATCG
CCGAGTGAGCGAGTATAAAGGTGAAGAAACGTACCTTGCGCTTGCTCACTAACTGAACCGGATTTCAAAAAGGAACA
TAAACCGCAACCCACAGCCGAAAT**ATG**CTGATCGAAGAGTGTCGGATAATTGGTGTCAATGTGCGAGTGTGGCTGTTT
TGGTCGTATCTGCGGCGCCGCGTTGTCCCGCTTCTGGTCGGCTGCATCCCGTCCCGTGTGAACGTTTCCCA
GTTCCTGAAGCTGTACTCGTCTGGGCGACATGAGCGAGCTCATCATCAACGGATACTTTACCGTGTGTAATTTA
ACCTCGTCGTCTacgtggcgaggggaggggcaataaccttcccacttggtggataatttcatacctttccatgtgtt
ttttattctctgttgttgccatccag**CTCCGAACCTCCCTTCTCGTGATCAATCGACGGAAATTTGAGACATTTT**
TTGAAGGCGTTGCCGCCGAGTACGCTCTCCTCGAGgtaagtcattggtttttctagtttttggggagttgttaca
ccataacacccccgacggtaacatttgatcgctccgcgaaatgtttgtacag**AAAAATGACGACATCCGACCCCGT**
GCTGGAGCGGTACACACGGCGGACGCATGCTATCGATATCGAATCTGTGGCTCGCGCCCTTCATTAGTGCCTGCT
TTGTGACCTATCCTCTGTTGTGCCCGGCGGCTACCGTACGGCGTCACGATACCGGGCGTGGACGTGCTGGCC
ACCCGACCTACCAGGTCGTGTTGTGCTGCAGGTTACCTTACCTTCCCGCCCTGCTGCATGTACATCCCGTTCAC

FIG. 2A

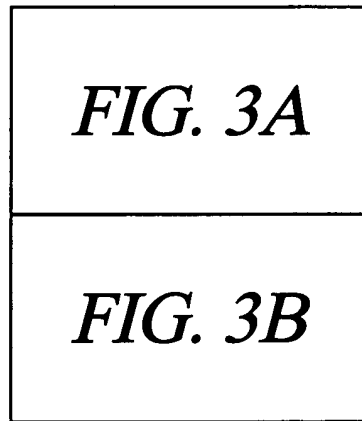
CAGCTTCTACGGACCTGCACGCTGTTTGCGCTCGTCCAGATAGCGGCCCTAAAGCAACGGCTCGGACGCTTGGGGC
GCCACAGCGCACGATGGCTTCGACCGGACACAGCGCCGGCACACTGTTTCGCCGAGCTGAAGGAGTGTCTAAAGTAT
CACAAACAAATCATCCAGtaagtagacgctagtagactcgaccggattgccccttccctcgggagggagggttggct
attcgggatgcggcagcagcatacacacaaacggagccattaatctcccgttttcacgcccgcacgggcact
gggtcatgttcacatcctccttccaaacacacacacgcgcgtgcacgtacagATATGTTTCATGATCTC
AACTCACTCGTCACCCATCTGTGCTGCTGGAGTTCCTGTGCTCGGATGATGCTGTGCGCACTGCTGTTTCTGCT
AAGCATTGtaagtaaaatcgaccgacgtgcgggtcgctagtcctcggactctcatttcgggactcaatcgttcc
atctcctaagAGCAATCAGCTGGCACAGATGATAATGATTGGATCGTACATCTTCATGATACTCTCGCAGATGTT
TGCCTTCTATTGGCATGCCAACGAGGTACTGGAGCAGGtaatggcgctgaagctgagtttggttgagcgggttcgcta
tagatcggctgtctacattgtgtgtttctgcatgggcatcggttttggttttccctccatttcagAGCCTAGGC
ATTGGCGATGCCATTACAAATGGAGCGTGGCCGACTTTGAGGAACCGATAAGGAAACGGTTGATTCTAATTATTGC
ACGTGCTCAGCGACCGATGGTAAAGttggctgatcgatgctctgttcaatgaacatggcacagaaggctgtgta
aatagctgttcattaagaagtttttcagaatgtatcgttttttagttgatttaaacgcattgttctatgcaatggta
gaaacaatagaccgcctttattaatccaagcttccttaggattgatttttattttaagagaaagataaacatttt
tagtaaccaatttagttacaggaacccaaatacacagaatttattattattattattattattattattattatt
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att
ttatt
gttgtgttcttattattgttgtgttattattattattattattattattattattattattattattattattattatt

FIG. 2B

ttccagtaatccataataaaaaataaagtaataaataagtaataaattccagtaactgtagtaatac
acaataatctctaagaattaaaattgcatttttgtaaatgaaatatgttgattgttcgaatagtttcagaaaaacttaaa
aatgcctcagcatataaacagttttgaggttggttcagggcatttagtttagataatttagtatatttaagcatttgtt
ttcattactacaaaaagcaaatattatgagtgaattactttcagttcttctaacgcctatgtgtatgcaattacat
aacaatagctctcttttatttgcatttttccctagtaaatcctaattccttcttccctcttgcaatATTAAA
GTCGGCAACGTGTACCCGATGACGTTGGAAATGTTTCAAAAAATTGCTCAACGTGCTCTACTCTCTATTTTCACACTGCT
GCGCCGAGGTACAACTAACTTAACCGGTAAACAAACAAAAATCCCCCTCATCTACTATGCAAAAGACAGCAGGCC
GATCATCAAAACACCATTAGCAGCCACAAAGTTACCAGCCGCTTATCCACGGGATTGGTGGAAAAGTTATTGCACTG
AAGCTCTTTCACCCAAATTTTCATGGAGGTTCCCTCTCAACCAACCCATTGAAGCGAATAAAAGTATCAGCAACCAG
GCGACGGTGAAAAACGCTGCATTATTGTGCTTGCTTCAGCATTCAGCGAATGACTCTTAAACTTTTCCATTCAAA
AGTCGGATGCTCACGATACGGAGCGGTGTGTTGTCGATCCGCGAGTGCACCTCGCAAGCCGGTGATGTGCCGGT
GGAATGCACAGATCGACACAGCGATAGATAATCGTTTGTTCGGTAATGGGAGGAAAAAGTAAGCTGCCAGCT
ACTTCATTTCCATGTTAATTGAAACTCAAGCCAAACGAACATGCAGAACCCGGTTGTTGTGTCTCCGCTCCGGGA
AAGTCTCTGCTCCGGGCATGGATTCTTTCCCCCTCCGGGTGTTGGGGTATTGTTTAGGTTTATTATTACAAA
TTCATATCCTTCCGCTTCCGCATCAGCCGACCCGGTGGTGCGCAGACAGATGTGCGGGGCAACAAAACTATGC
ACGAACATGGCCAAACAAACACAGCTTCTATCTCATCTGTGTGCGACTGTCTCGCTTTCCCGCTGCGTTGCTTGT
GTACTATCATTTGTTTAGTCCACGGGTTTACTTCTAATTCCATTGCACCAACAAAAACCACTACTCCACCCACTACTACTG
CCGGTTGCAACTTCGACAAGCGCATGGTTGGGATACGAACAAAAACCACTACTCCACCCACTACTACTACTG
CCACCACCACTAACACACTACACTTGGTTGGAGCTTGCAGACCCACAAAGCAAAACACGATACAGCTAGCTAGCT
GCTGTGTGCGCTCGAGTCAGCCGACGGTACAAGGTTTAACCGGTACAAGCAACTCCCGGACCGATCCCAAAACTCTG
ACAAGGCACGGGCGCATCCGGCAGTACGGTCGAAAAACATGGAATGTTAATTAAAACTGTAATTGTCAATCGC
TGCTACAAGTTGTGACACAGGAGAGAGAGACAGCGCGCCGATGGTGATGTTGTAAGATAAGATACAGGAA
AAGAGCGAGAAACATTGGTACGATTGTTGTTGTTAGCAAAATTTGATTTCCACTGATTTTGAGTGCAAAATTTAATGC
ATCGAAAAATTTGCCATTCAGGGTAAAGTTGCTCGTGACGGATCCCCCGGCTGCCAGGAATTCGATATCAAGCTTAT
CGATACCGTCGACCTCGAGGGGGGGCCCGGTACCCAGCTTTTGTTCCTTTTAGTGGA

FIG. 2C

+



Now 3A, 3B
due to
enlargement

FIG. 3

+

Anopheles gambiae odorant receptor 3 genomic sequence (SEQ ID NO: 11)

Features:

- 1) Presumed Untranslated 5' and 3' regions are underlined.
- 2) Putative Start (ATG) and Stop (TAA) codons are in **BOLD**.
- 3) Introns are ~~tentatively~~ assigned and are shown in lower case.
- 4) Exons are boxed.

was highlighted

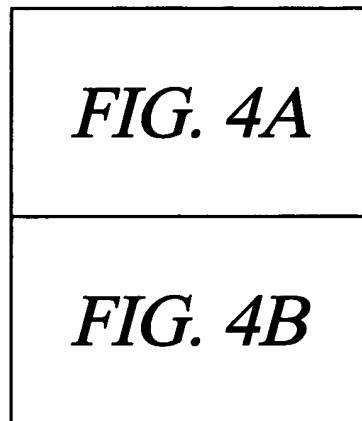
AAGCAGAACACATCAAGAGCAATTAGGTGTGTCGTACGTTAGCAAGTAGTTCGCCAGGAGGAATAAAATAG**ATGCC**
TTCTGAGCGGCTTCGTCTCATTACTTCCCTTCGGAACCTCCCAAGACAAACGCACGATGGTACTGCCAAAATTAAAGG
ATGAAACAGCAGTGATGCCGTTTCTGCTGCAAAATTCAAACCAATTGCCGGACTGTGGGTGACCGTTCCACAGCGGTAC
CGTTTATCTCATCTTTCTTCTACTTCTGCGGATGGTGGTTCTACCCAAAGTGTCTCGGTTATCCAGATCTCGA
GGTGGGTACGGGCACGGCGAGCTGATGTCGAATCGAACGCAATCTTCGGCATGCTAATGTTTCCTTTCAAC
GCGACAACACTACGAGCGATTGGTGCAATCAGCTGCAGGATCTGGCAGCTCTAGgtgagtatgcagccaatcgattgttc
caaacctcgcaacatccttcgtaaacactgctacacttccagTCCTCCAAGACCTACCCACAGAGCTGGGAGAGTAC
CTGATCTCAGTGAAACCGGTCGATCGGTTCTCCAAAATTTACTGTCTGCTGCATTTTCCATGGCAACGTTCTT
TTGGTTTCATGCCCGTCTGGACGACCTATTCCGCCCTACTTTGCTGTGCGCAACAGCACGGAACCGGTCGAGCACGTGT
TGCACCTCGAGGAAGAGCTGTACTTCCCTGAACATTCGGACTTCGATGGCGCACTATACGTTTATGTGGCCATTATG
TGGCCACGATCTATACGCTCGGTTTACCGGTGGCACAAGCTGCTGACCATTTTCAGCAATGTTAAGTACTGTTTC
GGCCATGCTGAAGCTCGTTGCACTCCGAATCCACTGTCTAGCGAGAGTAGCGCAAGACCGAGCGGAAAAGGAGCTGA
ACGAGATTATTCCATGCATCAGCGGGTACTCAAgtaagtaaatcaaatgaaagtttgcagggaataactgag
tgtgtgacccgtgcacatccctagCTGCGTGTTCCTGCTGGAGACGACATTCGCTGGGTATTTTCGTGCAGTTC
ATTCAGTGTAACAATGATCTGGTGCAGTCTCATCTCTACATAGCGGTGACCGgtaatagcatttctcgtcatttcgta
GccttattcaatccatttbtgtgaacgtgaatttccccagGGGTTTCAGCTCGACGCTAGCGAATGTTATGTGTCCAG
ATCATTTTGGTGACCGTGGAACCTTACGGCTACGGCTACTTCGGAAACAGATCTAACCCAGGAGTGCTTTGGgtacc

FIG. 3A

ctttgatgaagctcaaaaaagtaattccaaattctgttttcgattttccccctttccactagAGCTATGGCGTTG
CCCTCGCCATTACGATAGCGAGTGGTACAAAGTTTCCATTTCGATGCGCCGCAAACTTCGACTGCTACTGCAACGA
TCCCAAAACCGCTCGGCGTAACGGCGGGAAGTTTCGCTTCGTCAATGTGGCCCAAGgtaacattaat
tacagtttgaaaattctgaagaatgcattacttgcttacttggttccagATGCTCAAGATGTCCCTATTTCATT
TTACGTAGTACTGAAGGAGCAGTTT**TAG**GAGCTGCTGTTTCCACCCCTGGAAATGGCCCTTTTCGCACGTCTTCTGT
TTGTTGGACGCACGCAGCACCGAGAGCGCCCCCTGCACGCACGTGACGTATTTGGCTACTTTGACGTTTGCACCTTTG
ACAGCTGAAGGACAGGGTACAAATTTTGCTGCTGTTATTACGCGCAGCGCATTGATACGAAACAATTGGCCACAAG
TTCTACGATTTTAGCGTTTATTACTGTTCTGTAAGCAGCTTTTTCaCAATAAACACACACAATAACGTACCGACAG
TATTCTTTTCATTGTAGGATAGAGAAAGCCCGCCGAGCAGCCAAACCGCCGCAAAACGAAAGGCGGCACCCCG
GGGAAAAACACGGGAGCAAAACGAGAACAGAACGAGTAAACAACAACCCGGCCGGAACAACAACCGTGCCCGGAA
ACGA

FIG. 3B

+



now 4A, 4B
due to
enlargement

FIG. 4

+

Anopheles gambiae odorant receptor 4 genomic sequence (SEQ ID NO: 12)

Features:

- 1) Putative Start (ATG) and Stop (TAA) codons are in **BOLD**.
- 2) Introns are tentatively assigned and are shown in lower case.

GGGGAAC TCCCCCAGACCGACGACGGAAGCTAACGATGTGCAATTGAATAGTCATTAGT
AGCGTTT TGTCTCGCAACGAACTAACCTTTTGACTTTTAAAGTTCACTACGGTGAGGACAAAAA
TCAATAAAATTAAATCGAGACCGTTGATGAGCAAAAGAAAAAATAATTTTACTGATTTTCATT
CGTTCCATCGACTACATAATCATAATATATATGCCACATTTTATATAAGTTTGTATCATTTTAA
AACAAACAAAAATGCATCCTTTCGAATATTAGTCAGGTTGTATCAACA**ATG**AAGTTTGAACCTGT
TTCAAAAAATATTCCTCCCGGACACGGTCTTATCCTTCGTGCTAAGGCTTTTGCATATCGTGGGC
ATGAATGGGCGAGGATTTTCGGTCGCGAATTCGAGTTGGTGGCATTTTCTGTCTATTTAATCTT
TCTTGTAAATACCGCCACTAACGGGGGTACACCGATGGTCACCGGTGTACGCACCGAGTGTG
GAATTCCTGTTAATTGCAATATTACGGCGGCAGTATGTTCTTTG CCTACGATGTGGCCACTTT
CCAAGCGTTCATCCAGGAAC TGAAGAGCCTTTTCGGTTTGG gtaataatttaattaaattgcgttattgcat
catcattgtttctcttgcagTATGCTCACATTCGTACAGACTAAAGTATAAGCTGACCCGGTTCAACCGTC
GAGCGGATATTATCGCCAAAGTGCAACGACCTGCATGGGTGCTGTAAACGCTTTTCTACTGGAT
TGCACCGATA CCTTCCATCTGTGCGCACTACTACAGGTCGACCAATTCACCCGAACCCGTGCGG
TTTGTGCAACATTTAGAGGTGAAGTTCTATTGGCTCGAGAAATCGCACCTCAGTCGAGGACTACAT
AACCTTCGTGCTGATCATGTACCCGTCGTGGTTATGTGTGGTTACGTATGCAATTTGAAGGTGA
TGACCATCTGCTGAGCATTTGGACACTGTACACTGTACACCGGATGACTATAGAGATGGTAGA
GCAGTTGGAAAGCATGGCATCAGCGGAACGAACTGCCAGCGCCATACGCAACGTGGGGCAGAT
GCACAGTGGTTACTGAAATGCATTAGGCTTTTGAAACACGTCAATCCGATCGATGCTGATGCTGC

FIG. 4A

AGTGGTTGACCTGCCGTGTTAAACTGGAGCATTTCTCTCATCTATCTAACGAACGTGgttagtttgcctt
gttggaaatccaaaaaagatggctataatgaactttctattacagGCATCTCGCTACAAATCGGTTACCGTGGT
GGTAAATGTTTCTTGCCACTGCGGAAACTTTCCCTGTATTGTTACTTTGGACGCGGCTTGCGA
CACAAACAGCAGCTGTGGAGCAGCATCTATGTCTACACGGTGGTACAACTACCCAATAGCCTT
TCGCAGCAGCATTAGGATGATGTTGAGACAGTCGCAAGGCATGCACACATAACGGTGGGAAG
TTT'TTCCGCTTAATTGGAGAAATTAGCAGGATGTCAACTTATCCTACTCTGCTTACGTCGT
ACTTAAGGATGTAATAAAGATGGATGTACAG**TGA**ATGTTT'TT'TTGGCTTGGCAACGAATGA
AGTTTCCGAATCTATAATTAGATCTAGAAATTATACTAGATGTCATAATATGATCTTGGCCATGA
CCGGTTCCTGGTTTGGAAACCAATTCTCAAAACAAATT'TTGAACTTAGGGCAGGCATGAAATGTC
CCAAGAACCTATCCAAGTTCGTGAACTACATATTACCGAATCTATCCATTATTGCTCGGAAC
GGTTTGGTGTAAATAATTGTCCAAATGTTGTCTGTCCTGGACCTATCCAGACAAGATCTTCAATTA
TTCCCTACCACTGGAACTGATTAAATTGATGTAGGAAGTCATGGAGGTGTTTCAGGGAGAA'TTAA
CACTAA'TGTTCCAACTCAT'TATTCAAGGGCAAT'TCTATT'TTATATGCCCCCTACCGATTGATAC
GTATGTATTACTCCATTTCCTGGACTTTTGTCTTATTCTTGTCTGATTGGACGTGAAATGTTGA
GAAAAGATTCTTATTATGAGTGATACAGAGCCTTTAAATACTCCTACGTTGTTTGCTATTTAA
GTATGGCCAGGCTAATCACAAATCGCTACTAATGACAGAAATCTCTTCTAATTAAACCCTTTCGAT
TGATAGTGTCAATGTCAATGTCGAGATAATTGAAC'TGCAAAAGATACCTACCTTAAACGGAGCAG
AACACATCAAGAAGCAATTAGGTGTGTCTGTTACGTTAGCAAGTAGTTCCGGAGGAGGAAT'AAAAT
AG

FIG. 4B

+

enlarged

ANOPHELES GAMBIAE

Preferred DNA Codons

Amino Acids		Preferred Codons
Alanine	Ala A	GCC GCG GCT GCA
Cysteine	Cys C	TGC TGT
Aspartic acid	Asp D	GAC GAT
Glutamic acid	Glu E	GAG GAA
Phenylalanine	Phe F	TTC TTT
Glycine	Gly G	GGC GGT GGA GGG
Histidine	His H	CAC CAT
Isoleucine	Ile I	ATC ATT ATA
Lysine	Lys K	AAG AAA
Leucine	Leu L	CTG CTC TTG CTT CTA TTA
Methionine	Met M	ATG
Asparagine	Asn N	AAC AAT
Proline	Pro P	CCG CCC CCA CCT
Glutamine	Gln Q	CAG CAA
Arginine	Arg R	CGC CGG CGT CGA AGA AGG
Serine	Ser S	TCG AGC TCC AGT TCT TCA
Threonine	Thr T	ACG ACC ACT ACA
Valine	Val V	GTG GTC GTT GTA
Tryptophan	Trp W	TGG
Tyrosine	Tyr Y	TAC TAT

[http://www.kazusa.or.jp/codon/cgi-bin/showcodon\(con'd on next line\)
.cgi?species=Anopheles+gambiae+\[gbinv\]](http://www.kazusa.or.jp/codon/cgi-bin/showcodon(con'd on next line).cgi?species=Anopheles+gambiae+[gbinv])

FIG. 5

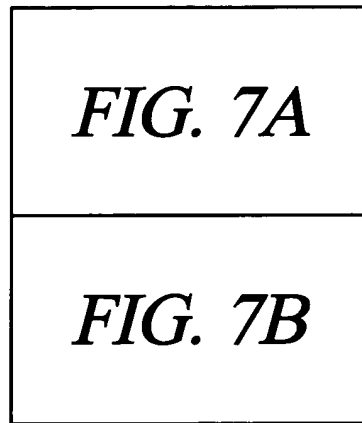
+

enlarged

Name	SEQ ID NO
Arrestin 1 (cDNA)	SEQ ID NO: 1
Arrestin 1 (polypeptide)	SEQ ID NO: 2
Odorant Receptor 1 (cDNA)	SEQ ID NO: 3
Odorant Receptor 1 (polypeptide)	SEQ ID NO: 4
Odorant Receptor 2 (cDNA)	SEQ ID NO: 5
Odorant Receptor 2 (polypeptide)	SEQ ID NO: 6
Odorant Receptor 3 (cDNA)	SEQ ID NO: 7
Odorant Receptor 3 (polypeptide)	SEQ ID NO: 8
Odorant Receptor 4 (cDNA)	SEQ ID NO: 13
Odorant Receptor 4 (polypeptide)	SEQ ID NO: 14
Odorant Receptor 5 (cDNA)	SEQ ID NO: 15
Odorant Receptor 5 (polypeptide)	SEQ ID NO: 16
Odorant Receptor 6 (cDNA)	SEQ ID NO: 17
Odorant Receptor 6 (polypeptide)	SEQ ID NO: 18
Odorant Receptor 7 (cDNA)	SEQ ID NO: 19
Odorant Receptor 7 (polypeptide)	SEQ ID NO: 20

FIG. 6

+



Now 7A, 7B
due to
enlargement

FIG. 7

+

Anopheles gambiae odorant receptor 5 genomic sequence (SEQ ID NO: 21)

Predicted Exons: ITALICIZED, UNDERLINED AND BOXED

Introns: lowercase.

tctagactgaacccatgacgggcattttattgagtcgttcgagttgacgactgtaccacgggaccacccggtttatcactatcactatt
aattaattataatgctttttagcagcctaccgggttttctctggatattcttaagttccatttgattatcaagatagaa
caacaacttgacctaaataatcattacgtacccttaatacaacctgtgcatcaaggagtttcggaagcaaaaatccgattgtct
gatgtgttgattccatccgattcgttactggttctgcaaaatcgccaataatacggcaatgtccttattcgaatcgaatcaacat
cacattggttcatttcgttttgcgtgcaaatatgtttatttgcaaaaggcaaggtaatgtcttaagagtaataacaattcgcgtg
tcatttttgcaccagtggtgccagaacctgttccttttagtccttcgaatacatccgaccagcaagcaagtgcatd[ATGG]
TGCTACCCGAAGCTGTCCGAACCGTACGCCGTGATGCCGCTTCTACTACGCTGCGCTGCAGCGG
TTTCGGTTGGGCTGTGGGGTGAAACGACCGCTATCGCTACAAGTTCCGGTTGGCATTTTTA
AGCTTCTGTCTGTAGTAGTTATTCCGAAGGTTGCCCTTCGGCTATCCAGATTTAGAGAC
AATGGTTCGGGAACAGCTGAGCTGATTTTCGAATGGAACGTACTGTTTGGGATGTTG
CTGTTTCTCTCAAGCTAGACGACTATGATGATCTGGTGATCCGGTACAAGGACATATC
AAAGATTGgtgctgataatgattgataaaaggaaacctttgagcaactcctatccttcaag[CTTCCCGTAAGGAC
GTTCCCTCGCAGATGGGGCACTATCTGGTAGCGCATCAATCATCGTATCGATCGGTTTTC
CAAGATCTACTGCTGCAGCCATCTGTGTTTGGCCATCTTCTACTGGGTGGCTCCTTCGT
CCAGCACCTACCTAGCGGTACCTGGGGGCACGAACAGATCCGTCCCGGTCCGAACATGT
GCTACACCTGGAGGAGCTGACTGGTTTCACACCCGCGTCTCGCTGGTAGATTAC
TCCATATTACCGCCCATCATGTGCTGCCCTACAATCTTTATGCTAGCGTACTTCGGTGGACT
AAAGCTGCTAACCATCTTCAGCAACGTGAAGTACTGTTCCGGCAATGCTCAGGCTTGTC

FIG. 7A

GCGATGAGAAATCCAGTTCATGGACCCGGCTGGACGAGCGGAAAGCGGAAAGGAACTGA
TGGAATAATCATCGTCATGCATCAGAAAGCGCTAAAgtaagggtctccgggtatgttgtagaatacat
ctagctgtttcagATGTGTGGAGCTGTTGGAAATCATCTTTCGGTGGGTTTTCTGGGACAG
TTCATACAGTGCCTAATGATCTGGTGCAGCTTGTTCTGTACGTCGCCGTTACCGgtaacta
aaagcaactgtagtctgtccacaccattcaactgtgtgtgtttgtcactcttccagGGTCTCAGCACAAAG
CGGCAAAACGTGGGTGTACTGTTTATCTGCTAACAGTGGAACCTACGGATTCTGCTA
CTTTGGCAGTGATCTTACCCTCGGAGGCAAGTTGTTATTCTGCTGAgtttcagttacttttccgttccc
tctaaccgtaccactgtaccattgttttgacagagagcttgagcgtagCACGTGCTGCCGTACGGTAGCCTCTGG
TATCGCCGTTCCGTTTCGATTCAACGGAAAGCTTCGAATGGTACTGCAGCGTGCCCA
AAACGGTCCGGCATCTCGGCTGGGAAGTTTTCCTTCGTCGACATTGAGCAGTTTGGCA
TgtatggggagaccttccactgtggcaagaaagattttcttttattaatgcactcttttaattacagATGGCAAAACATCA
TACTCGTTCTACATCGTTCTGAAGGATCAATTTTAaggggaactccccccaccagacgacggaa
agctaacgatgtgcaattgaatagtcattagtagcggtttttgtctcgcaaacgaaactaacctttgactttttaagttaactacggtag
gacaaaaatcaataaataatcgagaccggtgatgagcaaaaaaataattttactgattttcatttcgttccatcgacta
cataatcataattatgccacattttattataagttttg

FIG. 7B

enlarged

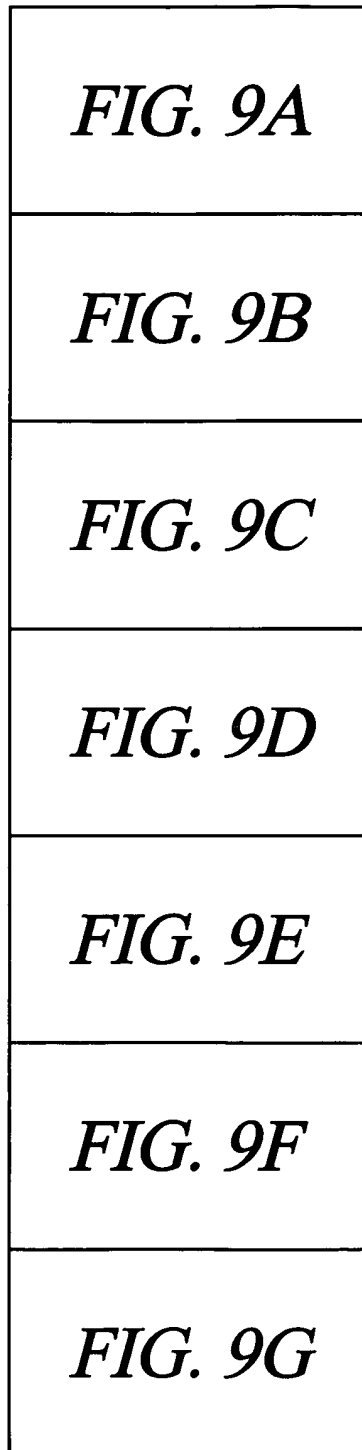
BOXED was highlighted

Introns: lowercase.

$$+$$

FIG. 8

+



Now 9A, 9B, 9C
9D, 9E, 9F, 9G
due to
enlargement

FIG. 9

+

was high

BOXED

BOXED

- was high
- BOXED

was high

BOXED

$$+$$

cctactagCCTGGGTTACGATAACATTTTTCGGCGAGAGCGTCAAGACTGTGCTCGATAAG
GCAACCAACGAGACGTACACGGTGGATATACCCCGGCTGCCCATCAAGTCCTGGTATC
CGTGGAAATGCAATGAGCGGACCGGCTACATTTTCTCTTTCATCTACCAGGTACGTTG
GCGGAATgtcctgcgcgtcacagttggcagtcagtgagcggaacacggcgaaaaatgggactaaaaacgggtcttcacaga
gccaacacattcctacagcaattgcataccttcggcggtcggaactgggcaatgcagctacaaacatcctcgcctaaagttatgcaat
tcgagcgacaaaatgttgcggttagggctttttgtgataatagtcgtttttgtcctcgtctatcaaaactctatacaacggagga
tccattttcgtacaaatgcctacagctcaagtttcaagtcgaatcgagcggtgggatacaactttttattcattttgtctaacgcccc
tcaacaaaattctatgttctcaatggcaaatgactcccgcaacaaatcgccccaaacggcaaaaaagagcgacgattatga
agatgtccaaaaccattgcccccgacgctttatctgatatttcgggatggcttttacttctgtctactttcaggcacaaaaaggaa
atgaaaccagcgagctcgtttgcggcttgagggttcttcaggcaactgagctgacttaaatcgaaacgatttttacgattc
tggatccagttttatgatgtggcctgcattacagtggaattataacctgatgttcatttcatttgaagtttgcgtggttaacg
ccgtaacgattaatttttcaaaagagattctttcaaaagagattcaaaaatgtgtataaacaatgctaacgaatggacccgtacttgg
agggttgcggaaaagtaaacgttttaaaaataattcatcacaaatcctctgcaaaacttgcgttaattaattggtgcacaataagtttaaac
gtggcggcagatgtgtcgtcgtccttcttccagcaagctcgtgcgaaaataatttccatcattttaatacacagccgtttgtg
cattttaattagcaaaagcaatataaaaaagcagctaaccatccccattaaaaaagtgcttcgggcccaattgttatbgcggtgga
aagtaatggttttacagtggaagtctcttcccatcggtggtacttcgcgatatcttcttatatacaagtgcatcacagaaaaaaa
ggacaaaatcctccttgctatggtctaaggccagcttcggtagccgcttcggatgtcataaagtttgatgggtgtttttaacatt
actccgctcttaaccacctaattggacttttcattgagctaaagttaaacccagccagcggtacgaccagcggttgatt

FIG. 9B

tcggcgggcctcatccccagttttgcgccaccaatattgaccttaatactgtacctcgagcgtagggccccggcgagagtcct
cggtgtaatgcaccccatgccacgggacgggataatccgttgggacggcgcgaaagcgactatcgcggaaggattggttcgacccg
tgctacaacacattttatgcttcacagatttacttctgctgttttcgatgggtccagagacaacctcgcgatgtcatgttctgctcctggt
tgctgtagcctcgagcagctgcaacacttgaaggtaggtacggtagcaaacgtggttctttacatcccgctgcagcattatcct
tatcgacgtgtagttaacggtaaaagaggaagcgataaaaaagcaaacattctctcacacctcgatctcttattttctctct
ctctctctctctctctctctctctctctctctccatctctccatctctcgggcagGGTATTATGCCGATCGTTGATG
GAGCTTTCGGCCTCGCTGGACACCTACCGGCCCAACTCTTCGCAACTGTTCGAGCAA
TTTCAGCCGGTTCCAAATCGGAGCTGATCATCAACGAAGgtatgtgaaacgtgtgctcgtggcagacg
gactcaaaagagagcataacacaatccccctggtagttcattcaatgaccttaacactcggaagctaagcgagacagtggggacag
tgagaaagagagagaacaagaaaaaaccatcatccgtacgacatcatcgctacgtaccggtatttcaggatgaggaataaaac
gtaggggaatgaaagtgcagagaatgataaaacaatccccacggcccccgctggacgaacggatgtagtgcgaagc
gagcaaaaaaagtcaataaattgaagtttaaaaatagattttccccgtccatccgtggtagcgtaaaagccccggcgacaactt
cgagcacggcgaccgtgcacagtagtgcacagttgtaggacggataagctccgttctcttttatactcttttttggagatttgt
ttgcgttcgcatcgtagacgagcttagtgccgtgttgctctaattgtctattataaagcgttccaaatagaagatcggttctctc
catttaactatcgccctgtacgcctgaaactatgcactgtgctgtgaaacccgtcaagctcgagcacgacgaatggccccaccgtacc
acgccccgtggtgccccaaagcgcaacggaattgcatgtttaacaaacctttgctaccatccaatccgtgtgaaattgccccgctctctt
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ctgcaggaccgatcgagctagtttattatcagcttttagtgtttatcccccatgccccacatcacgtctgtggagagtgggggaag
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cgctcgcttagcatgtgaggtacccgggatcgataccccggcatctccaacccccacacaaaaacgttttttaagaagatttttagggaa
gatattaacgggtacactgtgctctctctaaagttggaaagatgagatgatacagaagggaagaaacatgtgtacgtgtt

FIG. 9C

FIG. 9D

+

tttttcagcgggtgtatagtaaatgcatactttaaggcgtgattttcaaatgtagcgttccgtatgcagaaaacgccatggattatgc
aatttaaaacaatgctgttccttaacattcaataaacggcttattaaggaactttttgtgcaattttgttttaacagcaaatagtttagc
tcagaaacgatcacatttagtatgccttcaacaaagaaactcttttaaacacacacaatttgtaatgccattccctcgcagaaagtcttctgtc
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gcccctacgcaacagataaacagaaaggcaactcttgtgagcatcgcaatgccccgtctgaagttccgtcgaaaaatggggcctaattc
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FIG. 9E

aaatgttatcgttttcggcatgtttctcgggtacaaagcgtgtggcgctatgtggcatcccgattcccgacagagtgatcgatagtaaa
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TGTCAGCAGTGCCAGAAAGCGGATGACTATTTCCGGAGCCAAAGTTTTCACCGTTTCGC
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FIG. 9F

cttcacaaacatcgcttcacaaagttactaccacattattcattactattagttatatatttttgccctcttcattcttccatggccagaaact...
actgcaagaaaagcttcttttttgctcgccttccgatgggtggacgaagttggtaacaaaacggcgaagcaattagcataaaactattt...
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gcccgggtgctcgtggggggcccaaaaagaat

FIG. 9G